IN THE CLAIMS

Please amend the claims as follows.

1. (currently amended) A method of manufacturing an N-channel metal-oxide-semiconductor (NMOS) transistor with an P-type gate, comprising:

providing a substrate;

forming a gate dielectric layer over the substrate;

forming an indium doped polysilicon layer over the gate dielectric layer by using a chemical vapor deposition process with a gas comprising indium chloride ($InCl_3$);

patterning the indium doped polysilicon layer and the gate dielectric layer to form a gate; and

forming an N-doped region in the substrate on each side of the gate.

2. (currently amended) The method of claim 1, wherein a gas source for the introduced indium chloride ($InCl_3$) comprises evaporating solid indium chloride ($InCl_3$) to form indium chloride vapor before passing the indium chloride vapor into a reaction chamber during the ~~step of forming an indium doped polysilicon layer over the gate dielectric layer comprises performing an in-situ indium ion doping during a~~ chemical vapor deposition ~~operation~~ process.

Claims 3-7 (canceled).

8. (currently amended) A method of manufacturing an N-channel metal-oxide semiconductor (NMOS) transistor with a P-type gate, comprising:

providing a substrate;

forming a gate dielectric layer over the substrate;

performing a chemical vapor deposition process using a gas comprising indium chloride ($InCl_3$), SiH4, nitrogen and argon to form ~~forming~~ an indium doped polysilicon layer over the gate dielectric layer~~, wherein the indium doped polysilicon layer is formed by performing an in-situ doping chemical vapor deposition operation using gaseous indium chloride ($InCl_3$) as a doping source~~;

forming a silicide layer over the indium doped polysilicon layer;

patterning the silicide layer, the indium doped polysilicon layer and the gate dielectric layer to form a gate; and

forming an N-doped region in the substrate on each side of the gate.

9. (currently amended) The method of claim 8, wherein ~~the step of forming an doped polysilicon layer over the gate dielectric layer~~ a gas source of the introduced indium chloride ($InCl_3$) comprises evaporating ~~the~~ solid indium chloride ($InCl_3$) to form indium chloride vapor before ~~passing~~ introducing the indium chloride vapor into a reaction chamber during ~~for conducting~~ the chemical vapor deposition process.

10. (original) The method of claim 9, wherein the step of evaporating solid indium chloride to form a gaseous vapor comprises heating the solid indium chloride to a temperature of about 280°C.

Claim 11-20 (canceled).

21. (new) The method of claim 1, further comprising a step of forming a silicide layer over the indium doped polysilicon layer.

22. (new) The method of claim 2, wherein the step of evaporating solid indium chloride to form a gaseous vapor comprises heating the solid indium chloride to a temperature of about 280°C.